In the claims:

For the convenience of the Examiner, all claims being examined, whether or not amended, are presented below.

Please cancel, without prejudice, claims 95 and 99.

1-12. **(Cancelled)**

13. (**Currently amended**) A method for inducing or enhancing the glucose-responsiveness of a pancreatic islet or pancreatic cell, which pancreatic islet or cell has impaired islet function and which islet function is glucose-responsiveness, comprising administering to the pancreatic islet or pancreatic cell a PYY agonist or a biologically active fragment thereof, wherein said PYY agonist comprises an amino acid sequence having a corresponding nucleic acid sequence wherein the nucleic acid ~~a polypeptide encoded by a nucleic acid~~ ~~that~~ hybridizes under stringent conditions, including a wash step of 0.2X SSC at 65 °C, to SEQ ID NO: 1, ~~thereby inducing or enhancing~~ wherein the amount of said PYY agonist or biologically active fragment thereof is sufficient to induce or enhance the glucose-responsiveness of the pancreatic islet or cell, and wherein said PYY agonist[,] or biologically active fragment[,] has one or more of the following functions of PYY:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

14. **(Cancelled)**

15. (**Previously presented**) The method of claim 13, whereby administration of the PYY agonist causes the islet or cell to produce insulin when treated with glucose.

16. (**Original**) The method of claim 13, wherein the islet is a fetal islet.

17. (**Original**) The method of claim 13, wherein the cell is a fetal pancreatic cell.

18. (**Original**) The method of claim 13, wherein the islet is a postpartem islet.

19. (**Original**) The method of claim 13, wherein the cell is a postpartem cell.

20. (**Previously presented**) The method of claim 13, wherein the cell is a pancreatic β cell.

21. (**Currently amended**) A method for inducing or enhancing glucose metabolism in an animal having a disease associated with abnormal glucose metabolism, comprising administering to the animal an amount of a composition including a PYY agonist or a biologically active fragment thereof, wherein said PYY agonist comprises an amino acid sequence having a corresponding nucleic acid sequence wherein the nucleic acid ~~a polypeptide encoded by a nucleic acid that~~ hybridizes under stringent conditions, including a wash step of 0.2X SSC at 65 °C, to SEQ ID NO: 1, and wherein the amount of said PYY agonist or biologically active fragment thereof is therapeutically effective to induce or enhance glucose metabolism in the animal, and wherein said PYY agonist or biologically active fragment thereof has one or more of the following functions of PYY:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

22. (**Cancelled**)

23. (**Currently amended**) A method for treating a disease associated with altered glucose metabolism, comprising administering to an animal having a disease associated with altered glucose metabolism an amount of a composition comprising a PYY agonist or a biologically active fragment thereof, wherein said PYY agonist comprises an amino acid sequence having a corresponding nucleic acid sequence wherein the nucleic acid ~~a polypeptide encoded by a~~

~~nucleic acid that~~ hybridizes under stringent conditions, including a wash step of 0.2X SSC at 65 °C, to SEQ ID NO: 1, and wherein the amount of said PYY agonist or biologically active fragment thereof is sufficient to treat the disease, and wherein said PYY agonist or biologically active fragment has one or more of the following functions of PYY:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

24. **(Cancelled)**

25. **(Previously presented)** A method for treating a disease associated with altered glucose metabolism, comprising administering to an animal an amount of a composition comprising glucose responsive islets or cells obtained by the method of claim 13, 15, 17, 19 or 20, wherein the amount is therapeutically effective to induce or enhance glucose responsiveness in the animal.

26. **(Previously presented)** The method of claim 25, wherein said composition further comprises a PYY agonist comprising a polypeptide encoded by a nucleic acid that hybridizes under stringent conditions, including a wash step of 0.2X SSC at 65 °C, to SEQ ID NO: 1.

27. **(Previously presented)** The method of claim 26, wherein said composition is conjointly administered either simultaneously, sequentially or separately with said PYY agonist.

28. **(Currently amended)** The method of claim 23, wherein said disease is ~~associated with~~ a condition selected from insulin resistance, glucose intolerance or glucose non-responsiveness.

29. **(Previously presented)** The method of claim 23, wherein said disease is Type II diabetes mellitus (NIDD).

30. **(Previously presented)** The method of any one of claims 13 and 15-20, wherein said PYY agonist is administered together with a dipeptidylpeptidase inhibitor, insulin, or GLP-1.

31. **(Previously presented)** The method of any one of claims 13 and 15-20, wherein said PYY agonist is conjointly administered either simultaneously, sequentially, or separately with a dipeptidylpeptidase inhibitor, insulin, or GLP-1.

32. **(Previously presented)** The method of claim 30, wherein said dipeptidylpeptidase inhibitor is DPIV.

33. **(Currently amended)** A method for maintaining or restoring a function of pancreatic β cells, wherein the function is glucose responsivity or glucose sensing, comprising administering to a pancreatic islet or pancreatic cell, which pancreatic islet or pancreatic cell has impaired glucose responsivity or glucose sensing, a composition comprising a PYY agonist or a biologically active fragment thereof, wherein said PYY agonist comprises an amino acid sequence having a corresponding nucleic acid sequence wherein the nucleic acid ~~a polypeptide encoded by a nucleic acid that~~ hybridizes under stringent conditions, including a wash step of 0.2X SSC at 65 °C, to SEQ ID NO: 1, wherein the amount of said PYY agonist or biologically active fragment thereof is sufficient to maintain or restore the ~~thereby maintaining or restoring a~~ function of pancreatic β cells, and wherein said PYY agonist[,] or biologically active fragment[,] has one or more of the following functions of PYY:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

34. **(Cancelled)**

35. (**Previously presented**) The method of any one of claims 13 and 15-20, wherein said composition further comprises an agent capable of inhibiting the degradation of said PYY agonist.

36. (**Previously presented**) The method of any one of claims 13 and 15-20, further comprising administering to an animal an agent capable of inhibiting the degradation of said PYY agonist either simultaneously, sequentially or separately with said PYY agonist.

37. (**Previously presented**) The method of claim 36, wherein said agent is co-administered with the PYY agonist.

38. (**Cancelled**)

39. (**Previously presented**) The method of any of claims 13 and 15-20, wherein said PYY agonist enhances or recovers glucose responsiveness.

40-44. (**Cancelled**)

45. (**Currently amended**) A method for maintaining or restoring normal pancreatic islet function to a pancreatic islet or cell having impaired pancreatic islet function, wherein the function is glucose responsivity or glucose sensing, comprising administering to a cultured pancreatic islet or cell having altered pancreatic islet function a PYY agonist or a biologically active fragment thereof, wherein said PYY agonist an amino acid sequence having a corresponding nucleic acid sequence wherein the nucleic acid ~~comprises a polypeptide encoded by a nucleic acid that~~ hybridizes under stringent conditions, including a wash step of 0.2X SSC at 65 °C, to SEQ ID NO: 1, wherein the amount of said PYY agonist or biologically active fragment thereof is sufficient to maintain or restore ~~thereby maintaining or restoring~~ normal pancreatic islet function to a pancreatic islet or cell having altered pancreatic islet function, and wherein said PYY agonist[,] or biologically active fragment[,] has one or more of the following functions of PYY:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

46. (**Original**) The method of claim 45, where in said pancreatic islet is a failing β cell.

47-49. (**Cancelled**)

50. (**Previously presented**) The method of claim 21, wherein said animal is a human.

51. (**Cancelled**)

52. (**Previously presented**) The method of claim 13, wherein said pancreatic islet or cell is a stem cell.

53. (**Previously presented**) The method of claim 17, wherein the cell is a pancreatic β cell.

54. (**Previously presented**) The method of claim 19, wherein the cell is a pancreatic β cell.

55. (**Previously presented**) The method of claim 25, wherein said disease is associated with a condition selected from insulin resistance, glucose intolerance or glucose non-responsiveness.

56. (**Previously presented**) The method of claim 25, wherein said disease is Type II diabetes mellitus (NIDD).

57. (**Previously presented**) The method of claim 21, wherein said composition further comprises a dipeptidylpeptidase inhibitor, insulin or GLP-1.

58. (**Previously presented**) The method of claim 21, wherein said composition is conjointly administered either simultaneously, sequentially or separately with a dipeptidylpeptidase inhibitor, insulin or GLP-1.

59. (**Previously presented**) The method of claim 23, wherein said composition further comprises a dipeptidylpeptidase inhibitor, insulin or GLP-1.

60. (**Previously presented**) The method of claim 23, wherein said composition is conjointly administered either simultaneously, sequentially or separately with a dipeptidylpeptidase inhibitor, insulin or GLP-1.

61. (**Previously presented**) The method of claim 25, wherein said composition further comprises a dipeptidylpeptidase inhibitor, insulin or GLP-1.

62. (**Previously presented**) The method of claim 25, wherein said composition is conjointly administered either simultaneously, sequentially or separately with a dipeptidylpeptidase inhibitor, insulin or GLP-1.

63-64. (**Cancelled**)

65. (**Previously presented**) The method of claim 33, wherein said composition further comprises an agent capable of inhibiting the degradation of said PYY agonist.

66. (**Previously presented**) The method of claim 33, further comprising administering to an animal an agent capable of inhibiting the degradation of said PYY agonist either simultaneously, sequentially or separately with said peptidyl PYY agonist.

67. (**Previously presented**) The method of claim 66, wherein said agent is co-administered with the PYY agonist.

68. (**Cancelled**)

69. (**Previously presented**) The method of claim 21, wherein said composition further comprises an agent capable of inhibiting the degradation of said PYY agonist.

70. **(Previously presented)** The method of claim 21, further comprising administering to an animal an agent capable of inhibiting the degradation of said PYY agonist either simultaneously, sequentially or separately with said PYY agonist.

71. **(Previously presented)** The method of claim 70, wherein said agent is co-administered with the PYY agonist.

72. **(Cancelled)**

73. **(Previously presented)** The method of claim 23, wherein said composition further comprises an agent capable of inhibiting the degradation of said PYY agonist.

74. **(Previously presented)** The method of claim 23, further comprising administering to an animal an agent capable of inhibiting the degradation of said PYY agonist either simultaneously, sequentially or separately with said PYY agonist.

75. **(Previously presented)** The method of claim 74, wherein said agent is co-administered with the PYY agonist.

76. **(Previously presented)** The method of claim 23, wherein said PYY agonist enhances or recovers glucose responsiveness.

77. **(Previously presented)** The method of claim 21, wherein said PYY agonist enhances or recovers glucose responsiveness.

78. **(Previously presented)** The method of claim 33, wherein said PYY agonist enhances or recovers glucose responsiveness.

79. **(Previously presented)** The method of claim 25, wherein the glucose responsive islets or cells produce insulin when treated with glucose.

80. **(Previously presented)** The method of claim 25, wherein the islets include fetal islets.

81. (**Previously presented**) The method of claim 25, wherein the cells include fetal pancreatic cells.

82. (**Previously presented**) The method of claim 25, wherein the islets include postpartem islets.

83. (**Previously presented**) The method of claim 25, wherein the cells include postpartem cells.

84. (**Previously presented**) The method of claim 25, wherein the cells include pancreatic β cells.

85. (**Previously presented**) The method of claim 23, wherein said animal is a human.

86. (**Previously presented**) The method of claim 25, wherein said animal is a human.

87. (**Currently amended**) A method for inducing or enhancing the glucose-responsiveness of a pancreatic islet or cell, which pancreatic islet or cell has impaired glucose-responsiveness, comprising administering to the pancreatic islet or cell a PYY or a biologically active fragment thereof, ~~thereby inducing or enhancing~~ wherein the amount of said PYY or biologically active fragment thereof is sufficient to induce or enhance the glucose-responsiveness of the pancreatic islet or cell, wherein the PYY[,] or biologically active fragment thereof[,] has one or more of the following functions:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

88. (**Currently amended**) A method for inducing or enhancing glucose metabolism in an animal having a disease associated with abnormal glucose metabolism, comprising administering

to the animal an effective amount of a composition including a PYY or a biologically active fragment thereof, wherein the amount of PYY or a biologically active fragment thereof is effective to induce or enhance glucose responsiveness in the animal, thereby inducing or enhancing glucose metabolism in the animal, and wherein the PYY[,] or biologically active fragment thereof[,] has one or more of the following functions:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

89. (**Currently amended**) A method for treating a disease associated with altered glucose metabolism, comprising administering to an animal having a disease associated with altered glucose metabolism an amount of a composition comprising a PYY or a biologically active fragment thereof, wherein the amount of PYY or ~~a~~ biologically active fragment thereof is sufficient to treat the disease in the animal, and wherein the PYY[,] or biologically active fragment thereof[,] has one or more of the following functions:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

90. (**Currently amended**) A method for maintaining or restoring a function of pancreatic β cells, wherein the function is glucose responsivity or glucose sensing, comprising administering to a pancreatic islet or pancreatic cell, which pancreatic islet or pancreatic cell has impaired glucose responsivity or glucose sensing, a composition comprising a PYY or a biologically active fragment thereof, ~~thereby maintaining or restoring a~~ wherein the amount of said PYY or biologically active fragment thereof is sufficient to maintain or restore the function of pancreatic

β cells, wherein the PYY[,] or biologically active fragment thereof[,] has one or more of the following functions:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

91. (**Currently amended**) A method for maintaining or restoring normal pancreatic islet function, wherein the function is glucose responsivity or glucose sensing, comprising administering to a cultured pancreatic islet or pancreatic cell, which pancreatic islet or pancreatic cell has impaired glucose responsivity or glucose sensing, a PYY or a biologically active fragment thereof, ~~thereby maintaining or restoring a~~ wherein the amount of said PYY or biologically active fragment thereof is sufficient to maintain or restore normal pancreatic islet function, wherein the PYY[,] or biologically active fragment thereof[,] has one or more of the following functions:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

92. (**Currently amended**) A method for maintaining glucose-responsiveness of a pancreatic islet or pancreatic cells, comprising contacting the pancreatic islet or cells, which pancreatic islet or pancreatic cell has impaired glucose responsivity or glucose sensing, with a composition comprising a PYY or a biologically active fragment thereof, ~~thereby maintaining~~ wherein the amount of said PYY or biologically active fragment thereof is sufficient to maintain the glucose-responsiveness of the pancreatic islet or cells, wherein the PYY[,] or biologically active fragment thereof, has one or more of the following functions:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

93. (**Currently amended**) A method for maintaining glucose-responsiveness of a pancreatic islet or pancreatic cells, which pancreatic islet or pancreatic cells have impaired glucose-responsiveness, comprising contacting the pancreatic islet or pancreatic cells with an effective amount of a composition comprising a PYY agonist or a biologically active fragment thereof, ~~thereby maintaining~~ wherein the amount of said PYY agonist or biologically active fragment thereof is sufficient to maintain the glucose responsiveness of the pancreatic islet or cells, wherein said PYY agonist comprises an amino acid sequence having a corresponding nucleic acid sequence wherein the nucleic acid ~~a polypeptide encoded by a nucleic acid that~~ hybridizes under stringent conditions, including a wash step of 0.2X SSC at 65 °C, to SEQ ID NO: 1, and wherein said PYY agonist, or biologically active fragment, has one or more of the following functions of PYY:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

94. (**Currently amended**) A method for inducing, enhancing, or maintaining glucose-responsiveness of a pancreatic islet or pancreatic cells, which pancreatic islet or pancreatic cells have impaired glucose-responsiveness, comprising contacting the pancreatic islet or pancreatic cells with an effective amount of a composition comprising a PYY agonist or a biologically active fragment thereof, ~~thereby inducing, enhancing, or maintaining~~ wherein the amount of said PYY agonist or biologically active fragment thereof is sufficient to induce, enhance, or maintain

the glucose responsiveness of the pancreatic islet or cells, wherein said PYY agonist comprises a polypeptide at least 70% identical with SEQ ID NO: 3, and wherein said PYY agonist, or biologically active fragment, has one or more of the following functions of PYY:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

95. **(Cancelled)**

96. **(Previously presented)** The method of claim 94, wherein the PYY agonist comprises a polypeptide at least 80% identical to SEQ ID NO: 3.

97. **(Previously presented)** The method of claim 94, wherein the PYY agonist comprises a polypeptide at least 85% identical to SEQ ID NO: 3.

98. **(Previously presented)** The method of claim 94, wherein the PYY agonist comprises a polypeptide at least 90% identical to SEQ ID NO: 3.

99. **(Cancelled)**.

100. **(Previously presented)** The method of any of claims 92-94, wherein the pancreatic islet or cells include α, β, δ, or φ-cells.

101. **(Previously presented)** The method of any of claims 92-94, wherein the pancreatic islet or cells include insulin-producing islet cells.

102. **(Currently amended)** A method for treating a disease associated with altered glucose metabolism, comprising administering to an animal having a disease associated with altered glucose metabolism an amount of a composition comprising an effective amount of a PYY

agonist or a biologically active fragment thereof, wherein said PYY agonist comprises a polypeptide at least 70% identical to SEQ ID NO:3, and wherein said PYY agonist, or biologically active fragment, has one or more of the following functions of PYY:

(a) binds a PYY receptor;

(b) promotes glucose-responsiveness of pancreatic islets or pancreatic cells;

(c) inhibits intestinal motility;

(d) inhibits mesenteric blood flow;

(e) mediates gastric, pancreatic, or intestinal exocrine secretion; or

(f) stimulates net absorption of nutrients.

103. (**Previously presented**) The method of claim 102, wherein the PYY agonist comprises a polypeptide at least 80% identical to SEQ ID NO: 3.

104. (**Previously presented**) The method of claim 102, wherein the PYY agonist comprises a polypeptide at least 85% identical to SEQ ID NO: 3.

105. (**Previously presented**) The method of claim 102, wherein the PYY agonist comprises a polypeptide at least 90% identical to SEQ ID NO: 3.

106. (**Currently amended**) The method of any of claims 102, 103 and~~to~~ 105, wherein said disease is ~~associated with~~ a condition selected from insulin resistance, glucose intolerance or glucose non-responsiveness.

107. (**Currently amended**) The method of any one of claims 102, 103 and ~~to~~ 105, wherein said disease is ~~associated with~~ hyperglycemia.

108. (**Currently amended**) The method of any one of claims 102 to 105, wherein said disease is ~~associated with~~ obesity.

109. (**Currently amended**) The method of any one of claims 102, 103 and ~~to~~ 105, wherein said disease is ~~associated with~~ hyperlipidemia or hyperlipoproteinemia.

110. **(Currently amended)** The method of claim 23, wherein said disease is ~~associated with~~ hyperglycemia

111. **(Currently amended)** The method of claim 23, wherein said disease is ~~associated with~~ obesity.

112. **(Currently amended)** The method of claim 23, wherein said disease is ~~associated with~~ hyperlipidemia or hyperlipoproteinemia.

113. **(Previously presented)** The method of claim 25, wherein said disease is associated with hyperglycemia

114. **(Previously presented)** The method of claim 25, wherein said disease is associated with obesity.

115. **(Previously presented)** The method of claim 25, wherein said disease is associated with hyperlipidemia or hyperlipoproteinemia.

116. **(Currently amended)** The method of claim 89, wherein said disease is ~~associated with~~ a condition selected from insulin resistance, glucose intolerance or glucose non-responsiveness.

117. **(Currently amended)** The method of claim 89, wherein said disease is ~~associated with~~ hyperglycemia.

118. **(Currently amended)** The method of claim 89, wherein said disease is ~~associated with~~ obesity.

119. **(Currently amended)** The method of claim 89, wherein said disease is ~~associated with~~ hyperlipidemia or hyperlipoproteinemia.

120. **(New)** The method of any one of claims 89, 102, 103 and 105, wherein the composition further comprises GLP-1.

121. (**New**) The method of any one of claims 23, 89, 102, 103 and 105, wherein the treatment comprises nasal administration of the composition.

122. (**New**) The method of any one of claims 23, 89, 102, 103 and 105, wherein the PYY agonist or fragment is PYY(3-36).

123. (**New**) The method of claim 118, wherein the biologically active fragment is PYY(3-36), the composition comprises GLP-1, and the treatment comprises nasal administration of the composition.